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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WORKMAN NYDEGGER/MICROSOFT 1000 EAGLE GATE TOWER 60 EAST SOUTH TEMPLE SALT LAKE CITY, UT 84111			MORRISON, JAY A	
			ART UNIT	PAPER NUMBER
			2168	

DATE MAILED: 10/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/602,126	DON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jay A. Morrison	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 August 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5,7-18,21-28 and 30-38 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5,7-18,21-28 and 30-38 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 24 June 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Remarks*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/12/06 has been entered.
2. Claims 1-5,7-18,21-28 and 30-38 are pending.

### *Claim Objections*

3. Claim 17 is objected to because of the following informalities:
  - a. As per claim 17, line 2: "tear" should be "tier".  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5,7-18,21-28 and 30-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. ('Wong' hereinafter) (Patent Number 6,889,229) in view of Srinivasan et al. ('Srinivasan' hereinafter) (Publication Number 2004/0128400).

As per claim 1, Wong teaches

In a multi-tier server system that includes a back end server at a first tier and one or more additional servers at a middle tier, each additional server using multiple types of data objects that must be defined on the one or more additional servers before the data objects can be used by the one or more middle tier servers, a method for deploying one or more data types from the back end server to the one or more middle tier servers in a manner that maintains consistency and compatibility in the definitions of the data types and in code associated with each data type as stored on each middle tier server in the system, the method comprising: (see abstract and background)

an act of creating a special table in a database of the back end server, the special table including one or more fields for storing data identifying data types and corresponding code for enabling use of each of the data types, and the back end server acting as a single and centralized source from which all middle tier servers obtain data types and the corresponding code required to enable use of the data types by the one or more middle tier servers; (data structure that defines user-defined type and associated data dictionary definition, column 6, lines 14-30)

an act of identifying a data type to be deployed from the back end server to the one or more middle tier servers; (propagation of changes, column 18, lines 53-63)

an act of obtaining ... that corresponds to the data type to be deployed, ... including data obtained from the special table, including data identifying the data type, one or more definitions of the data type; (data dictionary, column 6, line 52 through column 7, line 4)

and an act of transmitting ... to the one or more middle tier servers in the multi-tier system such that the data type, as transmitted to and received by the one or more middle tier servers in the multi tier system, is consistent and compatible with a data type of the same kind stored on other middle tier servers in the system. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "the extended assembly ... and the code for enabling processing of data corresponding to the data type".

However, Srinivasan discloses "the extended assembly ... and the code for enabling processing of data corresponding to the data type" (dll, paragraph [0025]).

Art Unit: 2168

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly ... and the code for enabling processing of data corresponding to the data type" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 2, Wong teaches

an act of creating logic modules in the one or more middle tier servers that enable the one or more middle tier servers to query for. (placing data into the data dictionary of the new site, column 7, lines 57-65)

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 3, Wong teaches

the back end server includes a relational database. (column 3, lines 47-50)

As per claim 4, Wong teaches

the back end server comprises an SQL server. (column 3, lines 47-50)

As per claim 5,

Wong does not explicitly indicate “the one or more middle tier servers includes an email server.”

However, Srinivasan discloses “the one or more middle tier servers includes an email server” (paragraph [0024]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of “the one or more middle tier servers includes an email server” would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 7, Wong teaches

the act of identifying the data type to be deployed includes determining that the one or more middle tier servers has requested ..., since the one or more middle tier servers goes-are not yet enabled for the data type. (new master site not holding information about user-defined type, column 7, lines 5-33)

Art Unit: 2168

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 8, Wong teaches

an act of adding a new middle tier server to the multi-tier system, and wherein the new middle tier server comprises the one or more middle tier servers that has requested. (new master site, column 7, lines 5-21)

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 9, Wong teaches

an act of creating one or more object tables that are linked to the special table and that include additional information defining the data type to be deployed, such that ... also includes the additional information. (creating the database object on the new master site using the replicated data dictionary definition, column 7, lines 33-43)

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 10, Wong teaches

In a multi-tier server system that includes a back end server at a first tier and one or more additional servers at a middle tier, each additional server using multiple types of data objects that must be defined on the one or more additional servers before the data objects can be used by the one or more middle tier servers, a method for deploying one or more data types from the back end server to the one or more middle tier servers in a manner that maintains consistency and compatibility in the definitions of the data types

Art Unit: 2168

and in code associated with each data type as stored on each middle tier server in the system, the method comprising: (see abstract and background)

an act of modifying a special table in a database of the back end server, the special table including one or more fields for storing data that identifies data types and includes corresponding code for enabling use of each of the data types, and the back end server acting as a single and centralized source from which all middle tier servers obtain data types and the corresponding code required to enable use of the data types by the one or more middle tier servers, the act of modifying including at least one of modifying the stored data within the one or more fields and adding new stored data to the one or more fields; (data or changes referencing leaf attributes are equivalent to modification of a special table, column 15, lines 41-50)

an act of identifying a data type to be deployed from the back end server to the one or more middle tier servers; (propagation of changes, column 18, lines 53-63)

an act of obtaining ... that corresponds to the data type to be deployed, ... including at least one of the modified stored data and the new stored data as obtained from the special table, including data identifying the data type, ... the one or more middle tier servers to process the modified stored data or the new stored data associated with the data type; (data dictionary, column 6, line 52 through column 7, line 4)

and an act of transmitting ... to the one or more middle tier servers in the multi-tier system such that the data type as transmitted to and received by the one or more middle tier servers in the multi tier system is consistent and compatible with a data type

of the same kind stored on other middle tier servers in the system. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "the extended assembly ... and the executable code that, when executed, enables".

However, Srinivasan discloses "the extended assembly ... and the executable code that, when executed, enables" (dll, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly ... and the executable code that, when executed, enables" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 11, Wong teaches an act of determining which of the one or more middle tier servers should be sent. (column 7, lines 5-33)

Wong does not explicitly indicate "the extended assembly" However, Srinivasan discloses "the extended assembly" (paragraph [0025]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services

and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 12. Wong teaches

determining which of the one or more middle tier servers should be sent ...

comprises the acts of: sending data associated with the data type to the one or more middle tier servers; (data sent from existing server to new server, column 7, lines 22-33)

and receiving one or more requests for ... from the one or more middle tier servers upon the one or more middle tier servers identifying that the data associated with the data type cannot be processed at the one or more middle tier servers. (column 2, line 59 through column 3, line 5)

Wong does not explicitly indicate "the extended assembly".

However, Srinivasan discloses "the extended assembly" (d11, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claims 13-15,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 3-5 and are similarly rejected.

As per claim 16, Wong teaches

the act of modifying includes adding new stored data corresponding to a new data type not previously enabled in the multi-tier system prior to adding the new stored data. (transferring the contents of the database object when it is first instantiated, column 18, lines 53-62)

As per claim 17, Wong teaches

In a multi-tier server system that includes a back end server at a first tier and one or more additional servers at a middle tier, each additional server using multiple types of data objects that must be defined on the one or more additional servers before the data objects can be used by the one or more middle tier servers, a method for deploying one or more data types from the back end server to the one or more middle tier servers in a manner that maintains consistency and compatibility in the definitions of the data types and in code associated with each data type as stored on each middle tier server in the system, the method comprising: (see abstract and background)

an act of adding a new middle tier server to the multi-tier system, the new middle tier server being configured to utilize ... that are obtained from the back end server which acts as a single and centralized source from which all middle tier servers obtain data types ... required to enable use of the data types by the one or more middle tier

servers, the ... being configured to enable the use of one or more data types that are defined by data; (new master site and data from the data dictionary which describes a database object, column 7, lines 5-65)

an act of determining which of the one or more data types are to be deployed from the back end server to the new middle tier server, wherein the act of determining is based at least in part on a request by the new middle tier server for data to enable use of one or more data types; (propagation of changes, column 18, lines 53-63)

an act of obtaining ... corresponding to the one or more data types that have been determined to be deployed, each of the ... including data ... obtained from a special table stored in a database of the back end server, the special table including one or more fields for storing data identifying data types and corresponding code for processing data associated with the data types; (data structure that defines user-defined type and associated data dictionary definition, column 6, lines 14-30)

and an act of transmitting, to the new middle tier server, ... that correspond to the one or more data types that have been determined to be deployed, such that the one or more data types as transmitted to, and received by, the new middle tier server are consistent and compatible with one or more data types of the same kind on other middle tier servers in the system: and which were received by the other middle tier servers from the back end server. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "and corresponding code ... and enabled by executable code that is contained in the extended assemblies ... one or more extended assemblies ... and executable code".

However, Srinivasan discloses "and corresponding code ... and enabled by executable code that is contained in the extended assemblies ... one or more extended assemblies ... and executable code" (dll, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "and corresponding code ... and enabled by executable code that is contained in the extended assemblies ... one or more extended assemblies ... and executable code" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 18, Wong teaches the act of determining is further based at least in part on the new middle tier server identifying what other data types are supported, and identifying that the one or more data types to be deployed are not supported at the new middle tier server. (server unable to process the data, column 7, lines 43-57)

As per claim 21, Wong teaches

In a multi-tier server system that includes a back end server at a first tier and one or more additional servers at a middle tier, each additional server using multiple types of data objects that must be defined on the one or more additional servers before the data objects can be used by the one or more middle tier servers, a method for deploying one or more data types from the back end server to the one or more middle tier servers in a manner that maintains consistency and compatibility in the definitions of the data types and in code associated with each data type as stored on each middle tier server in the system, the method comprising: (see abstract and background)

an act of creating a special table in a database of the back end server, the special table including one or more fields for storing data identifying a data type ... for enabling processing of data associated with the data type, and the back end server acting as a single and centralized source from which all middle tier servers obtain data types ... by the one or more middle tier servers; (data structure that defines user-defined type and associated data dictionary definition, column 6, lines 14-30)

a step for deploying the data type from the back end server to the one or more middle tier servers, upon request, such that the data type as transmitted to and received by the one or more middle tier servers in the multi-tier server system is consistent and compatible with a data type of the same kind stored on other middle tier servers in the system. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "and corresponding code ... and the corresponding code required to enable use of the data types".

However, Srinivasan discloses "and corresponding code ... and the corresponding code required to enable use of the data types" (d11, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "and corresponding code ... and the corresponding code required to enable use of the data types" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 22, Wong teaches

the step for deploying the data type to the one or more middle tier servers upon request comprises corresponding acts that include: (column 2, lines 52-58)

an act of identifying the data type to be deployed based on receipt of the data type at the one or more middle-tier servers, and the one or more middle-tier servers requesting ... for the data type since the data type cannot be processed at the one or more middle tier servers; (column 2, line 59 through column 3, line 15)

an act of obtaining ... that corresponds to the data type to be deployed, ... including the data from the special table identifying the data type; (data dictionary, column 6, line 52 through column 7, line 4)

and an act of transmitting the extended assembly to the one or more middle tier servers in the multi-tier system that requested the extended assembly. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "the extended assembly ... and the executable code for enabling processing of the data associated with the data type".

However, Srinivasan discloses "the extended assembly ... and the executable code for enabling processing of the data associated with the data type" (dll, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly ... and the executable code for enabling processing of the data associated with the data type" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 23, Wong teaches

an act of creating logic in the one or more middle tier servers that enables utilization of. (placing data into the data dictionary of the new site, column 7, lines 57-65)

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 24, Wong teaches  
an act of creating at least one object table that includes at least some information defining the data type, and wherein ... includes the at least some information. (creating the database object on the new master site using the replicated data dictionary definition, column 7, lines 33-43)

Wong does not explicitly indicate "the extended assembly" However, Srinivasan discloses "the extended assembly" (paragraph [0025]):  
It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 25, Wong teaches

A computer program product for use in a multi-tier server system that includes a back end server at a first tier and one or more additional servers at a middle tier, each additional server using multiple types of data objects that must be defined on the one or more additional servers before the data objects can be used by the one or more middle tier servers, the computer program product including one or more computer-readable media having computer-executable instructions for implementing a method for deploying one or more data types from the back end server to the one or more middle tier servers in a manner that maintains consistency and compatibility in the definitions of the data types and in code associated with each data type as stored on each middle tier server in the system, the method comprising: (see abstract and background)

an act of creating a special table in a database of the back end server, the special table including one or more fields for storing data identifying data types and corresponding code for enabling use of each of the data types, and the back end server acting as a single and centralized source from which all middle tier servers obtain data types and the corresponding code required to enable use of the data types by the one or more middle tier servers; (data structure that defines user-defined type and associated data dictionary definition, column 6, lines 14-30)

an act of identifying a data type to be deployed from the back end server to one or more middle tier servers; (propagation of changes, column 18, lines 53-63)

an act of obtaining an extended assembly that corresponds to the data type to be deployed, ... including data obtained from the special table, including data identifying

the data type, one or more definitions of the data type; (data dictionary, column 6, line 52 through column 7, line 4)

and an act of transmitting ... to the one or more middle tier servers in the multi-tier system such that the data type as transmitted to and received by the one or more middle tier servers in the multi tier system is consistent and compatible with a data type of the same kind stored on other middle tier servers in the system. (data sent from existing server to new server, column 7, lines 22-33)

Wong does not explicitly indicate "the extended assembly ... and the code for enabling processing of data corresponding to the data type".

However, Srinivasan discloses "the extended assembly ... and the code for enabling processing of data corresponding to the data type" (dll, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly ... and the code for enabling processing of data corresponding to the data type" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 26,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 2 and is similarly rejected.

As per claims 27-28,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 4-5 and are similarly rejected.

As per claims 30-32,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 7-9 and are similarly rejected.

As per claim 33, Wong teaches

the method further includes modifying at least one of the special table and the one or more object tables. (column 15, lines 45-50)

As per claim 34, Wong teaches

is a single data structure that includes all the data required to enable the one or more middle tier servers to use the data type. (column 14, lines 23-43)

Wong does not explicitly indicate "the extended assembly"

However, Srinivasan discloses "the extended assembly" (paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the extended assembly" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services

Art Unit: 2168

and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 35,

Wong does not explicitly indicate "the one or more middle tier servers have limited program code means to process data associated with less than all of the data types in the multi-tier system, and the back end server has all program code means to process any data associated with all of the data types in the multi-tier system."

However, Srinivasan discloses "the one or more middle tier servers have limited program code means to process data associated with less than all of the data types in the multi-tier system, and the back end server has all program code means to process any data associated with all of the data types in the multi-tier system" (paragraphs [0024]-[0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the one or more middle tier servers have limited program code means to process data associated with less than all of the data types in the multi-tier system, and the back end server has all program code means to process any data associated with all of the data types in the multi-tier system" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 36, Wong teaches

Wong does not explicitly indicate "the one or more middle tier servers are only equipped to recognize and process data objects associated with a particular data type when program code means comprising executable machine code of the extended assembly for the particular data type has been received from the back end server and installed at the one or more middle tier servers."

However, Srinivasan discloses "the one or more middle tier servers are only equipped to recognize and process data objects associated with a particular data type when program code means comprising executable machine code of the extended assembly for the particular data type has been received from the back end server and installed at the one or more middle tier servers" (paragraphs [0024]-[0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the one or more middle tier servers are only equipped to recognize and process data objects associated with a particular data type when program code means comprising executable machine code of the extended assembly for the particular data type has been received from the back end server and installed at the one or more middle tier servers" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 37, Wong teaches

At a middle tier server in a multi-tier database server system that includes a back end database server at a first tier and one or more additional database servers at a middle tier, wherein the middle tier server is configured to process data corresponding to data types defined by the back end server at the first tier, a method for deploying one or more data types from the back end server at the middle tier server in a manner that maintains consistency and compatibility in the definitions of the data types and in code associated with each data type in the multi-tier database server system, the method comprising: (see abstract and background)

an act of receiving at a middle tier server one or more data objects from a back end server, the one or more received data objects associated with at least one data type; (placing data into new master site, column 7, lines 43-57)

an act of initiating one or more processing functions for the one or more received data objects associated with the at least one data type; (processing the data, column 7, lines 43-57)

an act of identifying that the at least one data type of the one or more data objects is not recognized, such that the initiated one or more initiated processing functions have failed at the middle tier server; (unable to create new database object and automatically moving the data defining a user-defined type, column 7, lines 43-65)

an act of pulling ... corresponding to the at least one data type from the back end server; (automatically moving the data defining a user-defined type, column 7, lines 43-65)

and an act of processing the one or more data objects associated with the at least one data type using the pulled ..., wherein the middle tier server successfully recognizes the at least one data type, and successfully processes the one or more received data objects associated with the at least one data type. (object in new master site, column 9, line 58 through column 10, line 7)

Wong does not explicitly indicate "one or more extended assemblies".

However, Srinivasan discloses "one or more extended assemblies" (dll, paragraph [0025]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "one or more extended assemblies" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

As per claim 38,

Wong does not explicitly indicate "the one or more pulled extended assemblies comprise computer-executable instructions that, when executed at the middle tier

server, cause one or more processors at the middle tier server to format the one or more data objects so that the one or more data objects can be processed."

However, Srinivasan discloses "the one or more pulled extended assemblies comprise computer-executable instructions that, when executed at the middle tier server, cause one or more processors at the middle tier server to format the one or more data objects so that the one or more data objects can be processed" (paragraphs [0024]-[0026]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Wong and Srinivasan because using the steps of "the one or more pulled extended assemblies comprise computer-executable instructions that, when executed at the middle tier server, cause one or more processors at the middle tier server to format the one or more data objects so that the one or more data objects can be processed" would have given those skilled in the art the tools to improve the invention by allowing the understanding of data types by disparate network services and/or nodes. This gives the user the advantage of having data types available across services commonly used.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-5,7-18,21-28 and 30-34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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